

# Creativity and entrepreneurial intention in young people

## Empirical insights from business school students

Leonidas A. Zampetakis, Manto Gotsi, Constantine Andriopoulos and Vassilis Moustakis

**Abstract:** *The authors examine the link between creativity and entrepreneurial intention in young people and the roles that family and education may play in encouraging this link. The results from a survey of 180 undergraduate business school students show that the more creative young people consider themselves to be, the higher are their entrepreneurial intentions. Students' creativity also fully mediates the effect of family support for creativity on their entrepreneurial intention. Support for creativity in the university is found to have no effect on their creativity or on their entrepreneurial intention. Entrepreneurship course attendance moderates the effect of individual creativity on entrepreneurial intention.*

**Keywords:** *entrepreneurial intention; creativity; entrepreneurship education; young entrepreneurs*

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Entrepreneurship is one of the major triggers of economic growth and job creation (McMullan and Long, 1987). Yet alarmingly, studies highlight the fact that entrepreneurial activity is lowest among young people under 25 (Harding and Bosma, 2006). In response, there has been an explosion of government initiatives seeking to unlock the entrepreneurial intention of young people (Robson *et al.*, 2009). Universities, for instance, are called to mobilize a more entrepreneurial workforce and help students overcome misconceptions about entrepreneurship (Warren *et al.*, 2010). Understanding the factors that drive entrepreneurial intention in young people is paramount in this effort. Traditionally, researchers have focused heavily on the role that an individual's attitude towards entrepreneurship, perceived social norms and self-efficacy plays in influencing the intention to

become an entrepreneur (Krueger *et al.*, 2000). Scholars have highlighted the dynamic interaction between the individual and the environment in explaining entrepreneurial behaviour (Shane and Venkataraman, 2000). Yet studies have also shown growing interest in the cognitive properties that trigger individuals to identify and exploit opportunities and, hence, mobilize entrepreneurial intention (for example, Smith *et al.*, 2009).

In this cognitive perspective on entrepreneurship, a burgeoning stream of research highlights the link between creativity – that is, the generation of novel and useful ideas (Amabile, 1996) – and entrepreneurship (Ward, 2004). Creativity has long been identified as a major component of entrepreneurship, as entrepreneurs need to be able to recognize opportunities, generate ideas and innovate (Schumpeter, 1934). It therefore

comes as no surprise that creativity has been proposed as an antecedent of entrepreneurial intentions (Gorman *et al.*, 1997). Hamidi *et al.* (2008), for instance, find that the more creative individuals are, the more likely they are to engage in entrepreneurship. Creativity can also influence the degree and type of novelty that entrepreneurs introduce to the economy, promoting innovative entrepreneurship (Koellinger, 2008). Creativity, innovation and entrepreneurship are, hence, inextricably linked. Yet scholars also indicate that this link may be responsive to social and individual variations (Drennan *et al.*, 2005; Krueger *et al.*, 2000; Schmitt-Rodermund, 2004). The roles of family (Drennan *et al.*, 2005) and education (Davidsson, 1995) have been highlighted in extant studies. However, entrepreneurial intention models have largely ignored the creativity–entrepreneurial intention link and the potential social and individual influences on this relationship.

To shed some light on the influence of creativity on the entrepreneurial intention of young people, as well as the roles that family and education may play in mobilizing this link, we draw on extant literature on the cognitive perspective of entrepreneurship and creativity theory. We propose that the more creative young people consider themselves to be, the higher their entrepreneurial intentions. In addition, we argue that young people's creativity mediates<sup>1</sup> the effect of creativity supported in their family and in the university environment on their entrepreneurial intention. Drawing on entrepreneurship literature, we also propose that entrepreneurship course attendance moderates (see note 1) the effect that young people's creativity has on entrepreneurial intention. We test our hypotheses across 180 randomly selected undergraduate students in a British business school.

The paper is structured as follows. Building on entrepreneurial cognition and creativity literature, we first present our entrepreneurial intention model and discuss our hypotheses. We then describe our methodology and discuss our results. The paper concludes with the implications of our results for theory and practice. Drawing on the limitations of our study, we also highlight future research opportunities.

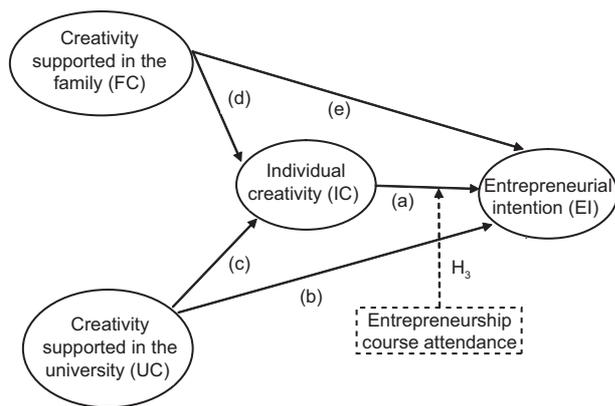
## **Theoretical foundations**

### *Creativity–entrepreneurial intention: a conceptual model*

Entrepreneurial intention refers to a conscious state of mind that directs a person's attention to fulfilling the goal of venture creation (Bird, 1988). Intentions have been highlighted as a predictor of entrepreneurship (Krueger *et al.*, 2000). Hence, understanding the factors

that trigger entrepreneurial intentions has occupied much of the entrepreneurship literature. Early research on the factors that influence the decision to start a new business focused primarily on personality traits (Low and MacMillan, 1988). Yet entrepreneurship literature has not identified a unique set of personality traits that characterize the entrepreneur (Shaver, 1995). Studies have, therefore, focused on Ajzen's (1991) theory of planned behaviour (TPB) and Shapero and Sokol's (1982) entrepreneurial event (SEE) model to understand the drivers of entrepreneurial intentions (Souitaris *et al.*, 2007). Drawing insights from the TPB, attitudes towards entrepreneurship, subjective norms and perceived behavioural control have been identified as antecedents of entrepreneurial intentions (Krueger *et al.*, 2000). Similarly, the SEE model highlighted perceptions of the desirability and feasibility of starting a business, as well as the propensity to act upon opportunities, as key drivers of entrepreneurial intentions (Shapero and Sokol, 1982). To shed further light on triggers of entrepreneurial intentions, scholars have also turned their attention to cognitive dimensions of entrepreneurship. In this realm, studies highlight the influence of 'knowledge structures that people use to make assessments, judgments or decisions involving opportunity evaluation and venture creation' (Mitchell *et al.*, 2002, p 97) on entrepreneurial intention. An entrepreneur is 'an individual who recognizes or discovers an opportunity to create something new (e.g., a new product or service, new market, new production or raw material, or new way of organizing existing technologies), and who then uses various means to exploit or develop this opportunity' (Baron and Ward, 2004, p 554). The underlying premise of entrepreneurial cognition studies is that some individuals are more likely than others to engage in entrepreneurial conduct due to their cognitive orientation on the nature of the venturing process (Baron, 2004). Cognitive approaches to entrepreneurship hence emphasize a person's creativity as an important, yet understudied antecedent of entrepreneurial intention (Ward, 2004).

Building on existing findings in cognitive entrepreneurship, entrepreneurial intention and creativity literature, Figure 1 presents our proposed model on the link between creativity and young people's entrepreneurial intentions. Drawing on cognitive entrepreneurship studies, we argue that entrepreneurial intention in young people is dependent on the extent to which they perceive themselves as creative. Previous empirical studies have highlighted the importance of the family and the university in influencing young people's creativity. Entrepreneurship course attendance has also been identified as a factor that is likely to influence entrepreneurial intention. In the following sections, we



**Figure 1.** The conceptual model.

present the hypotheses that describe the relationships conceptualized in our model. We begin by discussing the role of creativity as a key driver of entrepreneurial intention.

#### *Creativity and young people's entrepreneurial intention*

Entrepreneurship has long been described as an act of creativity (Schumpeter, 1934). Schumpeter (1934) was one of the first to propose that opportunities are created when new resource combinations result in superior products, services or processes. Yet recognizing and developing new opportunities relies on individuals' ability to see new connections between ideas or concepts (Davidsson, 2002). The entrepreneurial cognition literature has sharpened our understanding on the cognitive properties that help individuals to become alert to and recognize opportunities (Baron, 2004). Creativity has been featured as playing a key role in this process (Hills *et al*, 1999). Creativity is a broad term that has received different conceptualizations in diverse fields, such as art, music, science, education, advertising and management (El-Murad and West, 2004). In entrepreneurship studies, Amabile's (1996) definition of creativity (the production of novel and useful ideas) is often adopted, since 'novel and useful ideas are the lifeblood of entrepreneurship' (Ward, 2004, p 174).

Sternberg (2004) suggests that entrepreneurs, more so than non-entrepreneurs, have mental frameworks that endorse 'thinking outside the box' when it comes to opportunity recognition. Baron (2004) similarly argues that entrepreneurs tend to be more proficient than others at object or pattern recognition. Ames and Runco (2005) also note that entrepreneurs are able to produce a large number of ideas and often have unusual and novel ideas. Entrepreneurs tend to apply conceptual combinations, analogical reasoning, abstraction, problem formulation and other processes in order to come up with new ideas (Ward, 2004). Not surprisingly, creativity has therefore

been indicated as a trigger of entrepreneurial intention (Hills *et al*, 1999). Gorman *et al* (1997) and Feldman and Bolino (2000), for example, propose that individuals with a strong creativity anchor are motivated to become self-employed. Sternberg (2004) similarly argues that creative intelligence – the capacity to think outside the box – may influence an individual's decision to form a new venture. Hmieleski and Corbett (2006) also find that improvisation, a construct that is associated with creativity, accounts for a significant amount of variance in entrepreneurial intentions. Hamidi *et al* (2008) provide further evidence that high creativity scores yield a strong positive effect on entrepreneurial intentions, and argue that individual creativity should be incorporated in models of entrepreneurial intentions.

On the basis of these findings, we argue that the more students perceive themselves as creative, the higher their entrepreneurial intention. Therefore, we posit the following hypothesis:

*H1:* Students' individual creativity is positively related to entrepreneurial intention.

#### *The role of family and university*

Although creativity was traditionally considered as a personality trait, studies increasingly underline the fact that creativity is responsive to the context in which an individual develops (Simonton, 2000). Creativity is therefore portrayed as the result of an interactive process in interpersonal settings (Walton, 2003). For instance, studies highlight the role of the family in influencing individuals' creativity (Amabile, 1996) and shaping entrepreneurial attitudes (Drennan *et al*, 2005). Low levels of authoritarianism and restrictiveness, along with an encouragement of independence, have been found to characterize families that are most likely to foster creativity in their children (Miller and Gerard, 1979). Such adaptive families promote knowledge structures around divergent thinking, problem solving, imagination, flexibility and playfulness, and tend to equip their children with more developed creativity scripts (Deacon and Thomas, 2000). Gardner and Morgan's (1990) study among university students reveals that students with high individual creativity scores tend to come from families that promote creativity. In addition, creativity researchers posit that educational environments influence young people's creativity (Amabile, 1996). Studies highlight, for instance, the effects of teacher characteristics and behaviour on pupil creativity in elementary schools (Amabile, 1996). Turning their attention to universities, scholars agree that exposing students to creative role models within the university context endorses students' individual creativity (Elzubeir and Rizk, 2001). Chambers (1977) states that discouraging

student ideas and being too critical about novel concepts are practices that are likely to hamper creativity amongst university students.

Based on this discussion, we argue that when creativity is supported in the family and university environment, this impacts on young people's individual creativity, which in turn influences their entrepreneurial intention. Thus we propose the following hypothesis:

*H2:* Students' individual creativity mediates the effect of creativity supported in the family and university environment on entrepreneurial intention.

#### *The moderating role of entrepreneurship course attendance*

Career socialization theory proposes that career decisions are influenced by educational experiences (Dyer, 1994). Yet traditionally, business education has been accused of primarily preparing students for the corporate world, while impairing creativity and entrepreneurship in young people (Chamard, 1989). In response, universities are increasingly being called to act as a catalyst in mobilizing entrepreneurial intention amongst young people (Peterman and Kennedy, 2003). This has triggered an explosion of specialized entrepreneurship courses and programmes in universities around the world, with a view to providing social experiences that will encourage young people to start their own businesses (Kuratko, 2005). A number of studies provide some support for this premise. Peterman and Kennedy (2003) found that entrepreneurship education programmes could significantly change the entrepreneurial intentions of their participants. Souitaris *et al* (2007) also highlighted the fact that entrepreneurship programmes raised some entrepreneurial intentions among students enrolled in an entrepreneurship programme in one British and one French university. Similarly, Hamidi *et al* (2008) found that students engaged in entrepreneurship programmes had higher intentions to start their own businesses in the future.

Yet other studies point to the opposite effect (Kolvereid and Moen, 1997). Results on the effectiveness of formal entrepreneurship education, therefore, remain inconclusive (Cox *et al*, 2002). Gupta (1992), for instance, argued that compared with family conditioning, formal education had a minimal impact on entrepreneurial attitudes. University entrepreneurship programmes tend to emphasize the teaching of technical skills rather than creative thinking, and this may actually discourage entrepreneurial intention (for example, see Gorman *et al*, 1997). Studies also tend to be inconclusive on whether entrepreneurship programmes actually promote entrepreneurship or whether this influence is attributable to selection and self-selection in these

programmes of students with entrepreneurial potential (Kolvereid and Moen, 1997). Moreover, Pittaway and Cope (2007) note that the extent to which entrepreneurship education impacts on the level and effectiveness of graduate entrepreneurship is unclear.

Based on this discussion, we argue that entrepreneurship course attendance moderates the influence of individual creativity on entrepreneurial intention. We therefore put forward the following hypothesis:

*H3:* Entrepreneurship course attendance moderates the effect of students' individual creativity on entrepreneurial intention.

## **Methodology**

The methodology is discussed in terms of our measures, the questionnaire development, sampling and data collection process and, lastly, data analysis. We begin by outlining the measures used in our study.

### *Measures*

Similar to the vast majority of extant studies, the measurement of key variables is based on self-reporting (Gorman *et al*, 1997).

*Entrepreneurial intention (EI).* We measured entrepreneurial intention with two items adapted from Krueger *et al* (2000): 'I like the idea of becoming an entrepreneur' and 'I intend to start my own business in the near future'. Responses to both items were made on a 5-point Likert scale ranging from 1 ('strongly disagree') to 5 ('strongly agree'). The coefficient alpha for this scale was 0.75.

*Individual creativity (IC).* Self-reporting is often used when measuring individual creativity (Farmer *et al*, 2003), since creative individuals have a firm sense of self as a creative person (Shalley and Gilson, 2004). Research also indicates that creative people are open to new experiences and that divergent thinking leads to novel and useful ideas (Amabile, 1996). Individual creativity was therefore assessed using three items adapted from Zhou and George (2001): 'I think I am a very creative person', 'I like to try novel things despite the risk of failing', and 'I can easily think a lot of different and useful ideas'. Responses to these items were made on a 5-point Likert scale ranging from 1 ('strongly disagree') to 5 ('strongly agree'). We introduced Amabile's (1996) definition of creativity to our respondents at the beginning of the survey to ensure that creativity meant the same thing to all our respondents. The coefficient alpha for this scale was 0.60.

*Creativity supported in the family (FC).* Creativity literature suggests that the family may support or stifle individual creativity (Amabile, 1996). The study used three items to assess creativity supported in the family: 'My family members easily adapt to different circumstances' (based on Miller and Gerard, 1979), 'My family members are always thinking about new ideas for making their life easier' (based on Deacon and Thomas, 2000), and 'I can freely talk to my family members about new ideas' (adapted from Amabile *et al.*, 1996). The coefficient alpha for this scale was 0.62.

*Creativity supported in the university (UC).* Creativity supported in the university was assessed using three items (adapted from Amabile *et al.*, 1996): 'In my university you learn that there is more than one solution to a problem', 'In my university you learn to examine old problems in new ways', and 'In my university the faculty encourages students to produce new and useful ideas'. The coefficient alpha for this scale was 0.65.

*Entrepreneurship course attendance.* To study the moderating role of entrepreneurship course attendance (outlined in hypothesis 3), we also asked students to report whether they had taken an entrepreneurship module while studying for their undergraduate degree in business. The business school in this study offers two elective (second and third year) modules in entrepreneurship within the curriculum. Lectures in these entrepreneurship modules cover theoretical studies on entrepreneurship, but students' efforts are largely focused towards identifying an opportunity (in the form of a new product or service), developing a business plan and then presenting this for funding in front of a panel of potential investors. Hence, pedagogical tools in these modules included lectures by the module leaders and guest speakers, readings (textbooks and articles), case studies, actual and fictional business plans, as well as student-led presentations of business plans in front of practising entrepreneurs and potential investors.

#### *Questionnaire development, sampling and the data collection process*

We followed Dillman's (2000) suggestions for questionnaire development. Our pre-testing of the questionnaire included reviews by three professors of entrepreneurship and 10 non-participating students, observation and 'think-aloud' protocols, followed by interviews with respondents and a final check. The sample consisted of 180 randomly selected final year undergraduate students in business from a British university based in England. Two of the authors administered the questionnaires. Students were randomly approached as they exited lectures and seminars in business subjects, and were

**Table 1. Demographic characteristics of the sample (business school students in a British university located in England; sample size = 180).**

<b>Gender:</b>	
Male	50.6%
Female	49.4%
<b>Mean age (SD)</b>	20.17 (1.73)
<b>Nationality:</b>	
British	55%
Chinese (excluding Hong Kong)	11.7%
Indian	4.4%
Hong Kong	3.9%
Nigerian	3.3%
Pakistani	2.8%
Kenyan	2.2%
Bahrain	2.2%
French	1.7%
Other	12.8%
<b>Entrepreneurship course</b>	47.8%

asked to participate voluntarily in a research project regarding factors influencing entrepreneurial intentions. Questionnaires were completed by the students, with one of the researchers present in order to answer any questions. Researchers explained clearly that the questionnaires would be used for research purposes only, and that students' views would not affect their grades. Table 1 reports the demographic characteristics of our student sample.

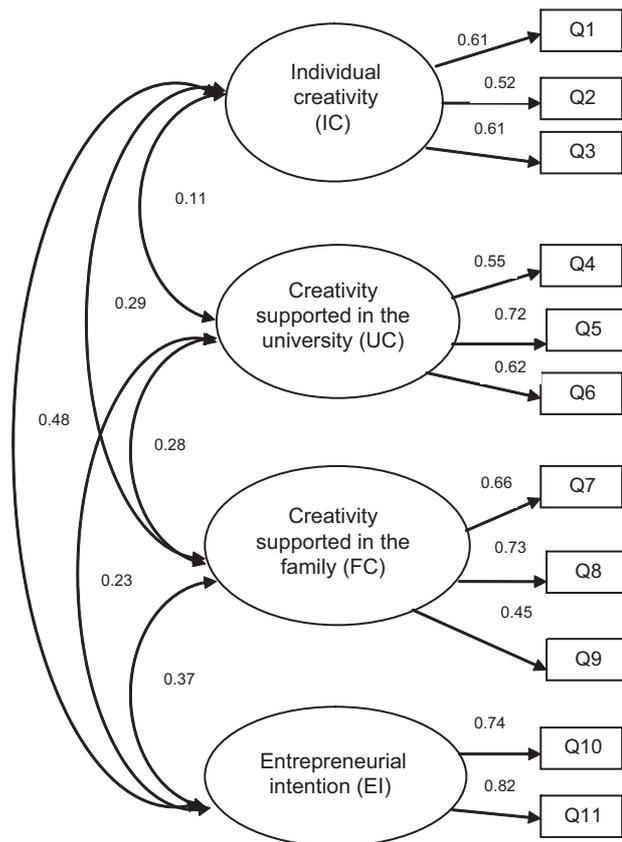
#### *Data analysis*

We assessed potential non-response bias by comparing early and late responses of returned surveys (Armstrong and Overton, 1977). We did not identify any missing data. To assess the hypothesized relationships, we used Structural Equation Modeling (SEM). In SEM, parameters are estimated by minimizing the difference between the observed covariances and those implied by the model. In this study, Analysis of Moment Structures (AMOS version 4.01) was used to test the hypotheses (Arbuckle, 1999). The estimation method employed was maximum likelihood (ML). An underlying assumption in SEM is that data are normally distributed, so data screening was performed prior to analysis (West *et al.*, 1995). Our data presented no severe non-normality. Following recommendations by McCallum *et al.* (1996), Steiger's Power Analysis module in STATISTICA 6 (StatSoft, 2001), which estimates model-level power in SEM, was then applied. The Power Analysis (given that  $\epsilon_1 = 0.09$ ,  $\alpha = 0.05$ ,  $N = 180$ ,  $df = 40$ ) concluded that if the final model did not actually have a close fit to the population, the estimated probability to reject a model that was actually incorrect was 85.52%.

A two-step modelling approach examined the measurement model and the structural model in

separate stages (Anderson and Gerbing, 1988). In the first stage, the study assessed the discriminant validity of the proposed constructs by conducting a confirmatory factor analysis. This step assessed a measurement model that allowed the underlying latent constructs to correlate freely, and constrained each item to load only to the factor for which it was a proposed indicator. To assess the discriminant validity of the proposed constructs further, the measurement model was compared with a model that constrained the correlations among the constructs to unity and examined the change in the chi-square ( $\chi^2$ ). The  $\chi^2$  difference was used to assess nested model comparisons by examining the difference in chi-square values between the two nested models. A non-significant  $\chi^2$  value indicates acceptance of the more parsimonious of the nested models. In contrast, a significant value demonstrates acceptance of the less constrained model (Kline, 2005). In addition, the one-factor model provides a test for common method bias. Through the nesting process, the relationships between the constructs are not explained solely or predominantly by common measurement methods used in collecting the data (Podsakoff *et al*, 2003). During the second step, the analysis combined both the measurement model and the structural model, depicting the hypothesized relationships between constructs. In addition, for each estimated structural path coefficient, the null hypothesis that the estimate is zero was tested using AMOS critical ratios (also known as z-test) (Arbuckle, 1999). Taking into account the lack of a single optimum or universally accepted measure of model fitness in SEM, several measures of model fit were applied (Shook *et al*, 2004).

To examine whether entrepreneurship course attendance has an effect in the model with the best fit to the data, multi-sample analysis of AMOS was then applied (Arbuckle, 1999). First the study tested the invariance of factorial measurement and structure across groups (Byrne, 2001). The measurement model (see Figure 2), in which all parameters were freely estimated, was compared with the one in which all factor loadings, all factor variances and covariances, error variances and item intercepts were constrained to be equal across groups; the  $\Delta\chi^2$  was also examined (Ployhart and Oswald, 2004). Parameters found to be invariant across groups were cumulatively constrained. Then analysis proceeded to a latent means test and tested group differences in structural pathways. This procedure provides evidence that group differences in structural pathways are not a function of differences in other parts of the underlying theoretical structure or instability of the model (Byrne, 2001).



**Figure 2.** Four-factor measurement model.  
 Note: Circles represent factors; boxes represent indicators. Unidirectional arrows depict factors' effects on indicators and double-headed arrows signify factor correlations. Standardized factor loadings (all statistically significant at the 0.001 level) appear along unidirectional arrows. Measurement errors are omitted for clarity.

## Results

### Model fitness

To assess the fitness of the measurement model, we present the confirmatory factor analysis of the four underlying constructs and associated goodness of fit measures (Figure 2). Results suggest an excellent fit to the data. All factor loadings are significant at the 0.001 level. A model comparison between the unconstrained measurement model and a model that constrained the correlations among the constructs to unity produces a significant difference in  $\chi^2$ , suggesting the presence of discriminant validity among the selected constructs ( $\Delta\chi^2 = 154.293$ ,  $\Delta df = 6$ ,  $p < 0.001$ ). In summary, these results support the multidimensionality of the measurement model.

To assess the structural model, Table 2 presents fit indices for the proposed four-factor benchmark model (Model 1 – the partially mediated model; see Figure 1).

**Table 2. Fit indices for nested models.**

Model	df	$\chi^2$	AIC	CFI	RMSEA	$\chi^2$ difference
1. Benchmark Model 1	38	38.2384, ns	94.2384	0.9992	0.0059	
2. Additional variance model	40	44.4331, ns	96.4331	0.9858	0.0249	
Difference between Models 1 and 2						6.1947*
3. Model 3	40	44.7948, ns	96.7948	0.9847	0.0259	
Difference between Models 1 and 3						6.5564*

Note: N = 180; \* $p < 0.05$  (two-tailed).

**Table 3. Assessment of hypothesized relationships.**

Hypothesis	Supported for sample	Explanation
H1 Students' individual creativity is positively related to entrepreneurial intention.	Yes	The corresponding standardized path coefficient is 0.41. The null hypothesis – that the path coefficient is 0 – is rejected at $p < 0.002$ .
H2 Students' individual creativity mediates the effect of creativity supported in the family and university environment on entrepreneurial intention.	Yes	Hypothesis is partially supported.
H3 Entrepreneurship course attendance moderates the effect of students' individual creativity on entrepreneurial intention.	Yes	Path a (Figure 1), indicating the effect of individual creativity on entrepreneurial intention, is stronger for students who did not attend an entrepreneurship course.

Additionally, Table 2 presents the fit statistics of two additional nested models. In Model 2, individual creativity simply adds to the variance in entrepreneurial intention accounted for by creativity supported in the family and in the university. Model 3 evaluates whether the effects of individual creativity take the role of a mediator in the family/university and entrepreneurial intention link. Results indicate that Model 1 provides the best fit to the data.

#### Assessment of the hypothesized relationships

Table 3 presents a summary of our results against the hypotheses of this study. In testing Hypothesis 1, results indicate that the more students perceive themselves to be creative, the more likely they are to show high entrepreneurial intentions (path (a) in Figure 1, 0.41,  $p = 0.002$ ). This supports Hypothesis 1. We then tested whether students' individual creativity mediated the effect of creativity supported in the family and university environments on entrepreneurial intention. We found that creativity supported in the university had no effect on students' reported individual creativity (path (c) in Figure 1 has a standardized path coefficient of 0.03,  $p = 0.812$ ) or on students' entrepreneurial intention (path (b) in Figure 1 has a standardized path coefficient of 0.12,  $p = 0.254$ ). In contrast, findings highlight that creativity supported in the family has a direct effect on students' reported individual creativity (path (d) in Figure 1 has a standardized path coefficient of 0.28,  $p = 0.04$ ). How-

ever, creativity supported in the family does not seem to pose a direct effect on students' entrepreneurial intention (path (e) in Figure 1 has a standardized path coefficient of 0.21,  $p = 0.112$ ). Taken together, these results confirm only part of Hypothesis 2. Specifically, we find that students' individual creativity fully mediates the effect of creativity supported in the family on their entrepreneurial intention. Thus, Hypothesis 2 is partially supported.

We then tested for differences in structural pathways in terms of entrepreneurship course attendance to examine whether entrepreneurship course attendance moderated the effect of students' individual creativity on entrepreneurial intention (Table 4).

We find that paths from individual creativity to entrepreneurial intention (path (a) in Figure 1) are stronger for students who have not attended an entrepreneurship course compared with those who have (Table 4). Results indicate that entrepreneurship course attendance moderates the effect of individual creativity on entrepreneurial intention, hence providing support for Hypothesis 3. Positive paths from creativity supported in the family to individual creativity (path (d) in Figure 1) are also stronger for students who have not attended an entrepreneurship course compared with those who have. Path (c) in Figure 1 is not significant for either group. Paths (e) and (b) in Figure 1 are not significant for students who have not attended an entrepreneurship course; and neither is path (b) in Figure 1 significant for

**Table 4. Structural paths for entrepreneurship course attendance (standardized estimates).**

Structural path	Entrepreneurship course attendance			
	Yes	<i>p</i>	No	<i>p</i>
a	0.30	0.05*	<b>0.55</b>	0.01*
b	<i>ns</i>	–	<i>ns</i>	–
c		<i>Not significant</i>		
d	0.29	0.08*	<b>0.32</b>	0.09*
e	<b>0.40</b>	0.02*	<i>ns</i>	–

Note: \*(two-tailed); ns = not significant.

students who have attended an entrepreneurship course. Path (e) in Figure 1 is statistically significant for students who have attended an entrepreneurship course. In sum, results suggest that for students who have attended an entrepreneurship course, individual creativity partially mediates the effects of creativity supported in the family on entrepreneurial intention. For those who have not attended an entrepreneurship course, the findings show a fully mediated relationship. For both groups, creativity supported in the university seems to have no effect on their self-reported creativity and entrepreneurial intention.

## Discussion, implications and directions for future research

This study contributes to our understanding of entrepreneurial intention in young people by helping to explain further the link between young people's creativity and their intention to start a business. Our proposed conceptual framework highlights the role of the family and the university in this relationship, and also underlines the potential moderating influence of entrepreneurship course attendance. Overall, our results support the notion that the more creative young people consider themselves to be, the higher their entrepreneurial intentions. This provides further support for conceptualizations in the cognitive entrepreneurship literature that underline the somewhat ignored link between individual creativity and entrepreneurial intentions (Hmieleski and Corbett, 2006; Ward, 2004). Not surprisingly, in our study, creativity supported in the family had a direct effect on young people's individual creativity. This mirrors writings in the creativity literature that highlight the role of the family in shaping an individual's creativity (Amabile, 1996). Our results further show that for young people who consider themselves as creative and exhibit higher entrepreneurial intentions, family role models seem to exert a direct influence on their entrepreneurial intentions. This supports studies on the link between family role models and entrepreneurial intentions (Walstad and Kourilsky,

1998). Interestingly, in contrast, for young people who consider themselves as less creative and who have lower entrepreneurial intentions, their self-reported creativity fully mediates the influence of the creativity supported in their families on their entrepreneurial intentions.

Contrary to the promise that business school education will be geared towards creativity and will foster entrepreneurship (Plaschka and Welsch, 1990; Solomon and Fernald, 1991), in our study, creativity supported in the university was found to have no effect on students' individual creativity or on their entrepreneurial intention. Disappointingly, as Heinonen and Poikkijoki (2006, p 8) point out, '...a typical university setting is unlikely to include many entrepreneurial elements... The budding entrepreneur needs not only knowledge (science), but also new ways of thinking, new kinds of skills and new modes of behaviour (arts).' Interestingly, the path from individual creativity to entrepreneurial intention was stronger for students who had not attended an entrepreneurship course at their university compared with those who had. The two elective modules in entrepreneurship offered in this business school focused students' efforts towards developing a business plan around a new product/service and then competing for funding in front of potential investors. Perhaps this overemphasis on the business plan approach and the potential pitfalls/risks/failure involved in starting a new venture may actually discourage young people from starting up their own businesses (Gorman *et al*, 1997).

On a broader theoretical level, this study highlights the need to incorporate individual creativity in studies of entrepreneurial intention. Results presented herein extend studies that depict cognitive factors as key influences on the decision to engage in business start-up activity (Ward, 2004). In particular, creativity should be considered as a factor that can influence young people's entrepreneurial intentions. Several implications for entrepreneurship educators, career counsellors and policy makers can be gleaned from our findings. First, to unlock the entrepreneurial intentions of young people, it is important that universities should seek to nurture individual creativity, since students' creativity can mediate the link between the creativity that they have experienced in their families and their entrepreneurial intention. We agree with Dewett and Gruys (2007) that creativity should occupy a more central role in business education. A cognition-based entrepreneurial instruction pedagogy may help to foster students' creativity and overcome the shortcomings of the traditional 'business-plan-only' approach (Mitchell and Chesteen, 1995). Similar to Peterman and Kennedy (2003) and Jack and Anderson (1999), our study supports entrepreneurship education focusing not only on the technical aspects of entrepreneurship, but also on the person as a whole.

Entrepreneurship education can help to enhance students' need for achievement and locus of control (Hansemark, 1998), their perception of self-efficacy and the likelihood of entrepreneurial action at some point in the future (Fayolle, 2005); but it should also aid the development of young people's creativity. Mobilizing creativity in young people may not only influence their intention to start a business, but also, potentially, the degree and type of novelty that they introduce to the economy (Koellinger, 2008).

Although our study sheds some light on the influence of creativity on the entrepreneurial intention of young people, it has several limitations that further research can seek to address. First, our study was limited to a sample of business school students in a British university based in England. To extend the generalizability of our results, we encourage scholars in this area to examine our proposed model with students in other disciplines and across different universities, regions and countries. Future research could also look into the influence of creativity training programmes on entrepreneurial intentions. Finally, our study highlighted interesting insights into the role that the family, university and entrepreneurship course attendance may play in mobilizing the creativity–entrepreneurial intention link in young people. Yet our understanding of why and how these factors interact could be further explored. Further research can delve deeper in understanding these relationships by employing a qualitative approach.

## Note

<sup>1</sup> Based on Baron and Kenny (1986), a mediator explains the relationship between an independent/predictor variable and a dependent/criterion variable. Mediators often represent properties of a person that transform the predictor variables in some way. A moderator is a variable that affects the strength of the relationship between an independent variable and a dependent variable.

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